

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: January 6, 1997  
Date Received: December 26, 1996  
Project: Metro Self Monitor, PO #M55608  
Date Samples Extracted: December 26, 1996  
Date Extracts Analyzed: December 31, 1996

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE  
FOR CHROMIUM, COPPER, NICKEL, ZINC  
USING METHOD 6010**

**Samples Processed Using Method 3005A**  
Results Reported as mg/L (ppm)

| <u>Sample ID</u> | <u>Chromium</u> | <u>Copper</u> | <u>Nickel</u> | <u>Zinc</u> |
|------------------|-----------------|---------------|---------------|-------------|
| M55608           | 0.47            | 0.73          | 0.37          | 0.22        |
| Method Blank     | <0.05           | <0.05         | <0.05         | <0.05       |

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

Date of Report: January 6, 1997

Date Received: December 26, 1996

Project: Metro Self Monitor, PO #M55608

### QUALITY ASSURANCE RESULTS FOR TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Laboratory Code: 74654 (Duplicate)

| Analyte: | Reporting<br>Units | Sample<br>Result | Duplicate<br>Result | Relative<br>Percent<br>Difference | Acceptance<br>Criteria |
|----------|--------------------|------------------|---------------------|-----------------------------------|------------------------|
| Chromium | mg/L (ppm)         | <0.05            | <0.05               | nm                                | 0-20                   |
| Copper   | mg/L (ppm)         | 0.62             | 0.67                | 8                                 | 0-20                   |
| Nickel   | mg/L (ppm)         | <0.05            | <0.05               | nm                                | 0-20                   |
| Zinc     | mg/L (ppm)         | 5.4              | 5.5                 | 2                                 | 0-20                   |

Laboratory Code: 74654 (Matrix Spike)

| Analyte: | Reporting<br>Units | Spike<br>Level | Sample<br>Result | % Recovery<br>MS MSD |      | Acceptance<br>Criteria | Relative<br>Percent<br>Difference |
|----------|--------------------|----------------|------------------|----------------------|------|------------------------|-----------------------------------|
| Chromium | mg/L (ppm)         | 5              | <0.05            | 94                   | 98   | 80-120                 | 4                                 |
| Copper   | mg/L (ppm)         | 5              | 0.62             | 91                   | 95   | 80-120                 | 4                                 |
| Nickel   | mg/L (ppm)         | 10             | <0.05            | 93                   | 97   | 80-120                 | 4                                 |
| Zinc     | mg/L (ppm)         | 5              | 5.4              | 89 b                 | 96 b | 80-120                 | 8 b                               |

Laboratory Code: Spike Blank

| Analyte: | Reporting<br>Units | Spike<br>Level | % Recovery<br>MS MSD |    | Acceptance<br>Criteria | Relative<br>Percent<br>Difference |
|----------|--------------------|----------------|----------------------|----|------------------------|-----------------------------------|
| Chromium | mg/L (ppm)         | 5              | 97                   | 98 | 80-120                 | 1                                 |
| Copper   | mg/L (ppm)         | 5              | 95                   | 95 | 80-120                 | 0                                 |
| Nickel   | mg/L (ppm)         | 10             | 96                   | 96 | 80-120                 | 0                                 |
| Zinc     | mg/L (ppm)         | 5              | 98                   | 98 | 80-120                 | 0                                 |

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D.  
Beth M. Albertson, M.S.  
Bradley T. Benson  
Kelley D. Wilt

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044

January 6, 1997

**INVOICE # 97ACU0106-1  
DUPLICATE COPY**

Accounts Payable  
Alaskan Copper Works  
628 South Hanford  
Seattle, WA 98134

RE: Project Metro Self Monitor, PO #M55608: Results of testing requested by  
Gerry Thompson, Project Manager for material submitted on December 26,  
1996.

1 water sample analyzed for  
Chromium, Copper, Nickel, and Zinc  
using Method 6010 @ \$65 per sample

\$ 65.00

Amount Due .....

\$ 65.00

KNJ. AI  
12.26.76  
11:09

12.26.96  
11:09

Company ALASKAN Copper Work Contact GERARD Thompson  
Address 628 HANFORD ST  
City, State, Zip SEATTLE WA 98134  
Phone # (206) 382-8779 FAX # (206) 382-4700 Date 12-26-96

PURCHASE ORDER #

SAMPLERS (signature)

### PROJECT LOCATION

REMARKS

### SAMPLE DISPOSAL INFORMATION

|                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Dispose after 30 days<br><input checked="" type="checkbox"/> Return Samples<br><input type="checkbox"/> Call for Instructions |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|

**SIGNATURE**

COMPANY

Time

AKC-0011852



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Beth M. Albertson, M.S.  
Bradley T. Benson  
Kelley D. Wilt

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044

January 6, 1997

Gerry Thompson, Project Manager  
Alaskan Copper Works  
628 South Hanford  
Seattle, WA 98134

Dear Mr. Thompson:

Included are the results from the testing of material submitted on December 26, 1996 from your Metro Self Monitor, PO #M55608 project.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

A handwritten signature in black ink, appearing to read "Kurt Johnson", with a stylized flourish at the end.

Kurt Johnson  
Chemist

keh  
Enclosures  
ACU0106R.DOC



# Waste Discharge Self Monitoring Report

Mail to: Metro, Industrial Waste  
130 Nickerson St., Suite 200,  
Seattle, WA 98109-1658

Company Name Alaskan Copper Works Station No. 7201 Month December 19 96 No. of Employees (per day) 19 Average 19 Maximum 19  
Permit No. 7201 Industry Type Metals All units mg/l unless otherwise noted

| Sample Dates (circle) | Sample Type<br>C (composite)<br>or G (grab) | pH  |     | Cadmium, Cd | Chromium, Cr | Copper, Cu | Lead, Pb | Mercury, Hg | Nickel, Ni | Silver, Ag | Zinc, Zn | Cyanide, CN,A | Cyanide, CN,T | Fats, Oils and Grease (FOG) | Total Toxic Organics (TTO) | Other Parameters | Flow (gpd) Total | Flow (gpd) Industrial | Flow (gpd) Specified | Notes |
|-----------------------|---------------------------------------------|-----|-----|-------------|--------------|------------|----------|-------------|------------|------------|----------|---------------|---------------|-----------------------------|----------------------------|------------------|------------------|-----------------------|----------------------|-------|
|                       |                                             | Min | Max |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 1                     |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 2                     |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 3                     |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 4                     |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 5                     |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 6                     |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 7                     |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 8                     |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 9                     |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 10                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 11                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 12                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 13                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 14                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 15                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 16                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 17                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 18                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 19                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 20                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 21                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 22                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 23                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 24                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 25                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 26                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 27                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 28                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 29                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 30                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| 31                    |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| Min.                  |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| Max.                  |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |
| Average               |                                             |     |     |             |              |            |          |             |            |            |          |               |               |                             |                            |                  |                  |                       |                      |       |

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

[Signature] 1/13/97  
Signature of Principal Executive or Authorized Agent Date

Please circle all permit violations

Additional Comments